

## **SIMULTANEOUS COMBUSTION WITH PREMIXED AND NON-PREMIXED FUELS AND FUEL INJECTOR FOR SUCH COMBUSTION**

### Abstract of the Disclosure

The present invention relates to a premixed fuel injector for low NOx emission and high heating load combustion. The premixed fuel injector of the present invention comprises a center nozzle and a plurality of outer nozzles arranged around the center nozzle, wherein a distance between the adjacent outer nozzles is 15 to 25 times as large as the diameter of the outer nozzle. Further, the center nozzle is larger in diameter than the outer nozzles. Furthermore, an air/fuel mixture is supplied to the outer nozzles and fuel is supplied to the center nozzle at a level of 0.1 to 10 % of the total amount of fuel supplied to the outer nozzles. According to the premixed fuel injector for high heating load combustion in which nozzles are arranged as described above, there are various advantages in that it's simple, without additional devices, stable flames can be obtained, and NOx emissions are greatly reduced during combustion.

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